**ANNA UNIVERSITY, CHENNAI**

**AFFILIATED INSTITUTIONS**

**R - 2013**

**B.E. MECHANICAL ENGINEERING**

**I – VIII SEMESTERS CURRICULUM AND SYLLABUS**

**SEMESTER I**

| SL. No. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---------|-------------|--------------|---|---|---|---|
| **THEORY** | | | | | | |
| 1. | HS6151 | Technical English – I | 3 | 1 | 0 | 4 |
| 2. | MA6151 | Mathematics – I | 3 | 1 | 0 | 4 |
| 3. | PH6151 | Engineering Physics – I | 3 | 0 | 0 | 3 |
| 4. | CY6151 | Engineering Chemistry – I | 3 | 0 | 0 | 3 |
| 5. | GE6151 | Computer Programming | 3 | 0 | 0 | 3 |
| 6. | GE6152 | Engineering Graphics | 2 | 0 | 3 | 4 |
| **PRACTICALS** | | | | | | |
| 7. | GE6161 | Computer Practices Laboratory | 0 | 0 | 3 | 2 |
| 8. | GE6162 | Engineering Practices Laboratory | 0 | 0 | 3 | 2 |
| 9. | GE6163 | Physics and Chemistry Laboratory - I | 0 | 0 | 2 | 1 |
| | | **TOTAL** | **17** | **2** | **11** | **26** |

**SEMESTER II**

| SL. No. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---------|-------------|--------------|---|---|---|---|
| **THEORY** | | | | | | |
| 1. | HS6251 | Technical English – II | 3 | 1 | 0 | 4 |
| 2. | MA6251 | Mathematics – II | 3 | 1 | 0 | 4 |
| 3. | PH6251 | Engineering Physics – II | 3 | 0 | 0 | 3 |
| 4. | CY6251 | Engineering Chemistry – II | 3 | 0 | 0 | 3 |
| 5. | GE6252 | Basic Electrical and Electronics Engineering | 4 | 0 | 0 | 4 |
| 6. | GE6253 | Engineering Mechanics | 3 | 1 | 0 | 4 |
| **PRACTICALS** | | | | | | |
| 7. | GE6261 | Computer Aided Drafting and Modeling Laboratory | 0 | 1 | 2 | 2 |
| 8. | GE6262 | Physics and Chemistry Laboratory - II | 0 | 0 | 2 | 1 |
| | | **TOTAL** | **19** | **4** | **4** | **25** |

**SEMESTER III**

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| THEORY | | | | | | |
| 1. | MA6351 | Transforms and Partial Differential Equations | 3 | 1 | 0 | 4 |
| 2. | CE6306 | Strength of Materials | 3 | 1 | 0 | 4 |
| 3. | ME6301 | Engineering Thermodynamics | 3 | 0 | 0 | 3 |
| 4. | CE6451 | Fluid Mechanics and Machinery | 3 | 0 | 0 | 3 |
| 5. | ME6302 | Manufacturing Technology - I | 3 | 0 | 0 | 3 |
| 6. | EE6351 | Electrical Drives and Controls | 3 | 0 | 0 | 3 |
| PRACTICAL | | | | | | |
| 7. | ME6311 | Manufacturing Technology Laboratory - I | 0 | 0 | 3 | 2 |
| 8. | CE6461 | Fluid Mechanics and  Machinery Laboratory | 0 | 0 | 3 | 2 |
| 9. | EE6365 | Electrical Engineering Laboratory | 0 | 0 | 3 | 2 |
| | | TOTAL | 18 | 2 | 9 | 26 |

**SEMESTER IV**

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| THEORY | | | | | | |
| 1. | MA6452 | Statistics and  Numerical Methods | 3 | 1 | 0 | 4 |
| 2. | ME6401 | Kinematics of Machinery | 3 | 0 | 0 | 3 |
| 3. | ME6402 | Manufacturing Technology– II | 3 | 0 | 0 | 3 |
| 4. | ME6403 | Engineering Materials and Metallurgy | 3 | 0 | 0 | 3 |
| 5. | GE6351 | Environmental Science and Engineering | 3 | 0 | 0 | 3 |
| 6. | ME6404 | Thermal Engineering | 3 | 0 | 0 | 3 |
| PRACTICAL | | | | | | |
| 7. | ME6411 | Manufacturing Technology Laboratory–II | 0 | 0 | 3 | 2 |
| 8. | ME6412 | Thermal Engineering Laboratory  - I | 0 | 0 | 3 | 2 |
| 9. | CE6315 | Strength of Materials Laboratory | 0 | 0 | 3 | 2 |
| | | TOTAL | 18 | 1 | 9 | 25 |

## SEMESTER V

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| **THEORY** | | | | | | |
| 1. | ME6501 | Computer Aided Design | 3 | 0 | 0 | 3 |
| 2. | ME6502 | Heat and Mass Transfer | 3 | 0 | 0 | 3 |
| 3. | ME6503 | Design of Machine Elements | 3 | 0 | 0 | 3 |
| 4. | ME6504 | Metrology and Measurements | 3 | 0 | 0 | 3 |
| 5. | ME6505 | Dynamics of Machines | 3 | 0 | 0 | 3 |
| 6. | GE6075 | Professional Ethics in Engineering | 3 | 0 | 0 | 3 |
| **PRACTICAL** | | | | | | |
| 7. | ME6511 | Dynamics Laboratory | 0 | 0 | 3 | 2 |
| 8. | ME6512 | Thermal Engineering Laboratory-II | 0 | 0 | 3 | 2 |
| 9. | ME6513 | Metrology and Measurements Laboratory | 0 | 0 | 3 | 2 |
| | | **TOTAL** | **18** | **0** | **9** | **24** |

## SEMESTER VI

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| **THEORY** | | | | | | |
| 1. | ME6601 | Design of Transmission Systems | 3 | 0 | 0 | 3 |
| 2. | MG6851 | Principles of Management | 3 | 0 | 0 | 3 |
| 3. | ME6602 | Automobile Engineering | 3 | 0 | 0 | 3 |
| 4. | ME6603 | Finite Element Analysis | 3 | 0 | 0 | 3 |
| 5. | ME6604 | Gas Dynamics and Jet Propulsion | 3 | 0 | 0 | 3 |
| 6. | | Elective - I | 3 | 0 | 0 | 3 |
| **PRACTICAL** | | | | | | |
| 7. | ME6611 | C.A.D. / C.A.M. Laboratory | 0 | 0 | 3 | 2 |
| 8. | ME6612 | Design and Fabrication Project | 0 | 0 | 4 | 2 |
| 9. | GE6674 | Communication and Soft Skills-Laboratory Based | 0 | 0 | 4 | 2 |
| | | **TOTAL** | **18** | **0** | **11** | **24** |

## SEMESTER VII

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| **THEORY** | | | | | | |
| 1. | ME6701 | Power Plant Engineering | 3 | 0 | 0 | 3 |
| 2. | ME6702 | Mechatronics | 3 | 0 | 0 | 3 |
| 3. | ME6703 | Computer Integrated Manufacturing Systems | 3 | 0 | 0 | 3 |
| 4. | GE6757 | Total Quality Management | 3 | 0 | 0 | 3 |
| 5. | | Elective – II | 3 | 0 | 0 | 3 |
| 6. | | Elective – III | 3 | 0 | 0 | 3 |
| **PRACTICAL** | | | | | | |
| 7. | ME6711 | Simulation and Analysis Laboratory | 0 | 0 | 3 | 2 |
| 8. | ME6712 | Mechatronics Laboratory | 0 | 0 | 3 | 2 |
| 9. | ME6713 | Comprehension | 0 | 0 | 2 | 1 |
| | | **TOTAL** | **18** | **0** | **8** | **23** |

## SEMESTER VIII

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| **THEORY** | | | | | | |
| 1. | MG6863 | Engineering Economics | 3 | 0 | 0 | 3 |
| 2. | | Elective – IV | 3 | 0 | 0 | 3 |
| 3. | | Elective – V | 3 | 0 | 0 | 3 |
| **PRACTICAL** | | | | | | |
| 4. | ME6811 | Project Work | 0 | 0 | 12 | 6 |
| | | **TOTAL** | **9** | **0** | **12** | **15** |

## TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 188

## ELECTIVES FOR B.E. MECHANICAL ENGINEERING

## SEMESTER VI

### Elective I

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| 1. | MG6072 | Marketing Management | 3 | 0 | 0 | 3 |
| 2. | ME6001 | Quality Control and Reliability Engineering | 3 | 0 | 0 | 3 |
| 3. | ME6002 | Refrigeration and Air conditioning | 3 | 0 | 0 | 3 |
| 4. | ME6003 | Renewable Sources of Energy | 3 | 0 | 0 | 3 |
| 5. | ME6004 | Unconventional Machining Processes | 3 | 0 | 0 | 3 |

## SEMESTER VII

### Elective II

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| 1. | ME6005 | Process Planning and Cost Estimation | 3 | 0 | 0 | 3 |
| 2. | ME6006 | Design of Jigs, Fixtures and Press Tools | 3 | 0 | 0 | 3 |
| 3. | ME6007 | Composite Materials and Mechanics | 3 | 0 | 0 | 3 |
| 4. | ME6008 | Welding  Technology | 3 | 0 | 0 | 3 |
| 5. | ME6009 | Energy Conservation and Management | 3 | 0 | 0 | 3 |
| 6. | GE6083 | Disaster Management | 3 | 0 | 0 | 3 |

### Elective III

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| 1. | ME6010 | Robotics | 3 | 0 | 0 | 3 |
| 2. | GE6081 | Fundamentals of Nanoscience | 3 | 0 | 0 | 3 |
| 3. | ME6011 | Thermal Turbo Machines | 3 | 0 | 0 | 3 |
| 4. | ME6012 | Maintenance Engineering | 3 | 0 | 0 | 3 |
| 5. | EE6007 | Micro Electro Mechanical Systems | 3 | 0 | 0 | 3 |
| 6. | ME6021 | Hydraulics and Pneumatics | 3 | 0 | 0 | 3 |

## SEMESTER-VIII
### Elective IV

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| 1. | IE6605 | Production Planning and Control | 3 | 0 | 0 | 3 |
| 2. | MG6071 | Entrepreneurship Development | 3 | 0 | 0 | 3 |
| 3. | ME6013 | Design of Pressure Vessels and Piping | 3 | 0 | 0 | 3 |
| 4. | ME6014 | Computational Fluid Dynamics | 3 | 0 | 0 | 3 |
| 5. | ME6015 | Operations Research | 3 | 0 | 0 | 3 |
| 6. | GE6084 | Human Rights | 3 | 0 | 0 | 3 |

### Elective V

| SL. NO. | COURSE CODE | COURSE TITLE | L | T | P | C |
|---|---|---|---|---|---|---|
| 1. | ME6016 | Advanced I.C. Engines | 3 | 0 | 0 | 3 |
| 2. | ME6017 | Design of Heat Exchangers | 3 | 0 | 0 | 3 |
| 3. | ME6018 | Additive Manufacturing | 3 | 0 | 0 | 3 |
| 4. | ME6019 | Non Destructive Testing and Materials | 3 | 0 | 0 | 3 |
| 5. | ME6020 | Vibration and Noise Control | 3 | 0 | 0 | 3 |